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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/809,170

03/25/2004

Daniel Lee Carter

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EXAMINER

ROTH, LAURA K

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/809,170	Applicant(s) CARTER ET AL.	
	Examiner Laura K. Roth	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Max Garwood on 25 July 2006 at 1:30 PM EST.

In the claims, please amend as follows:

12. (currently amended) A method of operating a fuser unit for duplex printing, comprising:

providing a hot roll and a backup roll in nipped relation, and a drive system including a drive motor for causing the rotation of the rolls;

operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media;

stopping rotation of the hot roll and the backup roll after fusing an image on a first side of the media while the drive motor rotates;

resuming rotation of the hot roll and the backup roll before advancing the media between the hot roll and the backup roll for fusing an image on a second side of the media ~~while the drive motor rotates~~; and

operating the motor at a speed greater than the first process speed after said resuming rotation.

Drawings

The drawings were received on 26 May 2006. These drawings are accepted.

Response to Amendment

The claim listing status indicators are objected to due to minor typographical errors resulting in improper indicator form in claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 9 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ahn (US Pub. 2003/0235449).

Regarding claim 1, Ahn (US Pub. 2003/0235449) teaches a method of operating a fuser unit for duplex printing, comprising: providing a hot roll (fig.1, #41) and a backup roll (fig.1, #42) in nipped relation (fig.1, see relation of #41 & #42; para.0011), and a drive system (fig.3, located in box #157) including a drive motor (fig.3, #157a) for causing the rotation of the rolls (para.0071, ln.1-5); operating the motor at a first process speed in a first direction (para.0093, ln.5-7: clockwise) for advancing media between the hot roll and backup roll for fusing an image on a first side of the media; reversing the

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direction of operation of the motor to begin duplex routing of the media by operating the motor in an opposite direction from the first direction (para.0098); re-reversing the direction of operation of the motor while media is routed back to the nip formed between the hot roll and the backup roll (para.0101); and operating the motor at a speed greater than the first process speed for a time while routing the media back to the nip formed between the hot roll and the backup roll (para.0099)

Regarding claim 2, Ahn (US Pub. 2003/0235449) teaches a method wherein said step of operating the motor at a speed greater than the first process speed being performed by operating the motor at a speed of about twice the first process speed (para.0099).

Regarding claim 3, Ahn (US Pub. 2003/0235449) teaches a method wherein said fuser having a second process speed greater than the first process speed, and said step of operating the motor at a speed greater than the first speed being performed by operating the motor at the second process speed (para.0099).

Regarding claim 4, Ahn (US Pub. 2003/0235449) teaches a method wherein said step of operating the motor at a speed greater than the first process speed being performed by operating the motor at a speed of about twice the first speed (para.0099).

Regarding claim 5, Ahn (US Pub. 2003/0235449) teaches a method wherein said fuser being operated in a one-image mode (para.0090).

Regarding claim 6, said step of operating the motor at a speed greater than the first process speed being performed by operating the motor at a speed of about twice the first process speed (para.0099).

Regarding claim 8, Ahn (US Pub. 2003/0235449) teaches an image forming apparatus wherein said fuser being operated in a two-image mode (para.0092).

Regarding claim 9, Ahn (US Pub. 2003/0235449) teaches an image forming apparatus wherein said step of operating the motor at a speed greater than the first process speed being performed by operating the motor at a speed of about twice the first process speed (para.0099).

Regarding claim 22, Ahn (US Pub. 2003/0235449) teaches an image forming apparatus further comprising the step of re-engaging the hot roll and the backup roll with the drive system during the re-reversing step (para.0101; para.0073).

From the disclosure of Ahn (US Pub. 2003/0235449), though not explicitly stated, the original driving speed of the second motor is implied to be slower than the second driving speed of the motor, presumably the first driving speed is the same as the driving speed of the first motor. It would have been obvious to one of ordinary skill in the art at the time of invention to set the first motor driving speed and the second motor's first driving speed equal so that the paper transport speed between the first driving section and the second driving section during forward transport does not rapidly change. If the second motor forward speed was slower, a paper jam would be caused and if it was considerably faster, image quality could potentially be deteriorated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn (US Pub. 2003/0235449) in view of Yoshioka (US 5,659,846).

Ahn (US Pub. 2003/0235449) teaches all of the limitations of claims 1 and 5 (upon which claims 7 and 8-9 depend).

However, Ahn (US Pub. 2003/0235449) fail to teach teach an additional step of stopping the media during duplex routing.

Regarding claim 7, Yoshioka (US 5,659,846) teaches including a step of stopping the media during duplex routing (col.7, ln.52-58).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Ahn (US Pub. 2003/0235449) to incorporate the intermediate sheet storage mode of Yoshioka (US 5,659,846) to allow the user greater flexibility of duplex printing option by allowing the user to print more than one copy of a media at a given time and allowing a variety of duplex printing options that are otherwise unavailable with the one-image printing (col.7, ln.45-51).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn (US Pub. 2003/0235449) in view of Murata (US Pub. 2004/0037601).

Ahn (US Pub. 2003/0235449) teaches all of the limitations of a method according to claim 1, upon which claims 10 and 11 depend.

However, Ahn (US Pub. 2003/0235449) fails to teach preheating a backup roll.

Regarding claim 10, Murata (US Pub. 2003/0081962) teach including preheating the backup roll before said step of operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0067).

Regarding claim 11, Murata (US Pub. 2003/0081962) teach said preheating performed by rotating the hot roll and the backup roll at greater than the first process speed (para.0067).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the fixing unit of Ahn (US Pub. 2003/0235449) with the faster roller heating rotational controls of Murata (US Pub. 2003/0081962) in order to reheat the backup roller in a quick and efficient manner (para.0050) and to thereby prevent defective fixing (para.0006).

Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn (US Pub. 2003/0235449) in view of Murata (US Pub. 2003/0081962).

Regarding claim 12, Ahn (US Pub. 2003/0235449) teaches a method of operating a fuser unit for duplex printing, comprising: providing a hot roll (fig.1, #41) and a backup roll (fig.1, #42) in nipped relation (fig.1, see relation of #41 & #42; para.0011), and a drive system (fig.3, located in box #157) including a drive motor (fig.3, #157a) for causing the rotation of the rolls (para.0071, ln.1-5); operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0093, ln.5-7: clockwise); stopping

rotation of the hot roll and the backup roll after fusing an image on a first side of the media while the drive motor rotates (para.0073); resuming rotation of the hot roll and the backup roll before advancing the media between the hot roll and the backup roll for fusing an image on a second side of the media (para.0101).

Regarding claim 13, Ahn (US Pub. 2003/0235449) teaches a step of operating the motor at a speed greater than the first process speed being performed by operating the motor at a speed of about twice the first process speed (para.0099).

Regarding claim 14, Ahn (US Pub. 2003/0235449) teaches an image forming apparatus wherein said fuser being operated in a one-image mode (para.0090).

Regarding claim 15, Ahn (US Pub. 2003/0235449) teaches an image forming apparatus wherein said fuser being operated in a two-image mode (para.0092).

Regarding claim 17, Ahn (US Pub. 2003/0235449) teaches an image forming apparatus wherein said fuser being operated in a one-image mode (para.0090).

Regarding claim 20, Ahn (US Pub. 2003/0235449) teaches a method of operating a fuser unit for duplex printing, comprising: providing a hot roll (fig.1, #41) and a backup roll (fig.1, #42) in nipped relation (fig.1, see relation of #41 & #42; para.0011), and a drive system (fig.3, located in box #157) including a drive motor (fig.3, #157a) and drive train (fig.3, series of gears #162-164) for causing the rotation of the rolls (para.0071, ln.1-5); operating the motor at a first process speed in a first direction (para.0093, ln.5-7: clockwise) for advancing media between the hot roll and backup roll for fusing an image on a first side of the media; disengaging the hot roll from the drive train after fusing an image on a first side of the media (para.0073; para.0097); re-

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engaging the hot roll with the drive train before advancing the media between the hot roll and the backup roll for fusing an image on a second side of the media (para.0101; para.0073).

However, Ahn (US Pub. 2003/0235449) fails to teach operating the motor at a speed greater than the first process speed after said resuming rotation or re-engaging the drive with the hot roll.

Regarding claim 12, Murata (US Pub. 2003/0081962) teaches stopping rotation of the hot roll and the backup roll after fusing an image on a first side of the media (fig.11, after fixing, rollers are stopped – second interval); resuming rotation of the hot roll and the backup roll before advancing the media between the hot roll and the backup roll for fusing an image (fig.11, pre-rotation mode); and operating the motor at a speed greater than the first process speed for a time while routing the media to the nip formed between the hot roll and the backup roll (para.0053).

Regarding claim 18, Murata (US Pub. 2003/0081962) teaches including preheating the backup roll before said step of operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0067).

Regarding claim 19, Murata (US Pub. 2003/0081962) teach said preheating performed by rotating the hot roll and the backup roll at greater than the first process speed (para.0067).

Regarding claim 20, Murata (US Pub. 2003/0081962) teach said preheating performed by rotating the hot roll and the backup roll at greater than the first process speed (para.0067).

It would have been further obvious to one of ordinary skill in the art at the time of invention to modify the fixing unit of Uchida et al. (US Pub. 2004/0037601) with the faster roller heating rotational controls of Murata (US Pub. 2003/0081962) in order to reheat the backup roller in a quick and efficient manner (para.0050) and to thereby prevent defective fixing (para.0006).

Regarding claim 13, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Regarding claim 16, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Regarding claim 21, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Though twice the speed is not explicitly taught, the Office believes, in view of *In re Aller*, (220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955)), that the ranges set forth in the claims are optimum workable ranges discovered by experimentation and that the applicant shows no evidence that the specified values are critical.

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

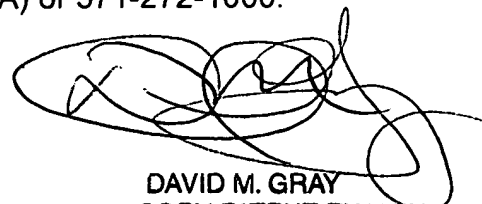
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura K. Roth whose telephone number is (571)272-2154. The examiner can normally be reached on Monday-Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571)272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LKR
7/26/2006


DAVID M. GRAY
SUPERVISORY PATENT EXAMINER